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EDITORIAL DEPARTMENT NOTE

For many years a controversy has been going on as to whether the cost accountant is or is not a part of management. On the one hand are the die-hards who want to relegate him to the role of a keeper of the archives, a place where cost figures are effectively entombed. On the other hand are the concerns who realize the value of the accountant's work. They ask for figures as to past and current performance, but more importantly they wish to know about tomorrow's performance. It is into the latter picture that our first article fits. Here is a case study of the work of the factory accountant, the place he occupies in the organization of an internationally known manufacturer, his qualifications and duties, and the types of costs he must produce to answer different types of questions.

The author of the first article, Christian E. Jarchow, is well qualified to discuss problems of the factory cost accountant. He entered the employ of the International Harvester Company in 1914, became General Auditor in 1920, and Assistant Comptroller in 1927. In 1943 he entered on his present duties as Vice President and Comptroller of the Company. In addition he has other interests covering both professional and civic affairs.

Payroll practices and procedures are always of interest to accountants. Though some of the wartime complications are likely to abate or disappear, the general pattern has been set, and it remains for the accountant to find the proper solution in specific cases by devising the best possible procedures. I. J. Nicholas Zavodney presents in the second paper in this issue his answer in the form of a case study of payroll practices at the Hawthorne Works of the Western Electric Company. Mr. Zavodney is a graduate of the University of Nebraska; he has been associated with the Western Electric Company for twenty years, ten of which have been spent at the Company's headquarters on auditing, cost accounting, payroll practices, and developments. He is currently Supervisor of Business Methods at the Company's Hawthorne Works.

Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the view expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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THE FACTORY ACCOUNTANT'S PLACE IN MANAGEMENT

By Christian E. Jarchow, Vice President and Comptroller, International Harvester Co., Chicago, Ill.

FOR the past five years industry has been engaged to a very large extent in war production. During that time the main consideration was the attainment of maximum production of war goods in accordance with delivery schedules prescribed by the armed forces. It was important to be familiar with allowable costs as defined by the Government and to exercise great care in the determination of estimated costs of war products which were to be sold on a fixed price basis, but there was little time left for cost control and cost reduction programs. Now industry has started on its reconversion program. In this program the objective is not necessarily to return to the conditions which existed prior to the war, but to prepare for the new conditions which will be encountered in the future. Some companies are going to enter entirely new fields of production and seek out new markets in whole or in part. Most companies will be faced with different competitive conditions than existed prior to the war. Practically all companies will encounter pressure for increased wages on the one hand and the minimizing of price increases on the other, the inevitable effect being to "squeeze" still further the narrowing profit margin. With these new conditions facing industry, it is only natural that we must once more seek to place the proper emphasis on the importance of reliable cost information and the development of an adequate system of operating controls.

In considering the factory accountant's place in management, it is necessary to bear in mind the growing importance of the work of the factory accountant and particularly his influence on managerial decisions. The title "factory accountant" applies to the individual responsible for the accounting work at the factory, whether he is known as the factory accountant, works auditor, factory controller, or by some other designation. Moreover there are certain principles that apply quite generally to every factory accountant, regardless of the kind of product made in the factory to which he has been assigned. In our own company we have

factory accountants (or "works auditors" as we call them) at our farm implement plants, tractor plants, motor truck plants, twine mills, steel mills, and coal and iron ore mines. These operations are carried on in various locations in the United States, Canada, Europe, and Australia and, while they vary widely in production processes and in product, the functions and responsibilities of our factory accountants are essentially the same.

Organizational Structure

In our company the accounting organization is headed by the comptroller, in charge of both staff and line organizations. The staff organization formulates the accounting policies for the company, and the line organization is charged with the responsibility of carrying out these policies. The line organization is separated along divisional lines, the company having operating divisions for its principal product lines. Each division has a divisional comptroller, with a factory accountant or works auditor at each plant. The factory accountant occupies a position relative to the works manager of his plant which is analogous to the position the divisional comptroller occupies with respect to the general manager of the division, or which the comptroller occupies with respect to the president of the company. With the increasing complexities of factory operations and the development of scientific factory administration, the factory accountant is recognized more and more as an important member of the local managerial team. As such, it is felt that he can make a real contribution to its prime objective of turning out a good product in the desired quantities at as low a cost as possible.

General Qualifications and Duties

It should be borne in mind that the factory accountant is a representative of the comptroller and is in full charge of all accounting work at the plant. He should have a good basic understanding of general accounting principles. He should have a specialized knowledge of cost accounting and should keep up with current developments in this field by subscribing to technical magazines, by attendance at professional meetings, etc. He should also have a knowledge of the shop processes and operations of his plant and of the equipment used by it. He should be able to formulate

procedures for collecting operational data and to design special forms for this when necessary, and he should know how such data can be best recorded in the cost accounting records and translated into operating reports suitable for the use of management. He should have such a close knowledge of the affairs of the plant that he will be able to point out readily to management elements brought out by the operating reports which indicate unsatisfactory performance.

The factory accountant has the responsibility for selecting new employees for the plant accounting staff, assigning them to their duties, and supervising their training. He should be capable of directing the work of a fairly large organization and of keeping the work up to date. He should be capable of making a wise delegation of authority and responsibility through department and section heads, because it is obviously impossible for him alone to exercise direct supervision over all accounting work. He should have a personality that will inspire confidence, ambition, and enthusiasm on the part of the accounting people under his jurisdiction. It is just as important that the members of the accounting clerical force have the proper attitude toward their jobs as it is for other employees in the plant. He should watch particularly those employees who appear to be especially promising and capable of assuming added responsibilities and should encourage them to advance themselves by studying the job ahead and, in some cases, by enrolling in an outside institution for further accounting study. It is of prime importance that the factory accountant keep the salary rates of all office employees on a proper basis, considering the nature of each job. In most large organizations, he is aided in this by salary administration plans through job analyses and established rate ranges for the various jobs. He should pay particular attention to natural promotional lines and should promote employees as opportunity affords and as their capabilities warrant in order to develop an experienced and effective organization. He should recommend to his superiors at the home office those individuals of his department who should be considered for important appointments at other operating locations or at the home office.

The advent of office unions has not made the personnel problems

of the factory accountant any easier. It is more important than ever that his selection of office employees be carefully handled, inasmuch as it may be difficult to correct mistakes because of the handicap caused by seniority rights, etc. The matter of job classification is likewise of increasing importance now that the office unions are on the lookout for inequities in responsibility and pay. The factory accountant has a responsibility as part of the management in seeing that his actions properly interpret the company policy in the handling of personnel problems.

As chief accounting officer of the plant, the factory accountant represents the company in many outside contacts, with governmental authorities, vendors, public accountants, transportation companies, and others. Through such contacts outside parties form an opinion of the company by the impression the factory accountant makes, and it is therefore necessary that he display courtesy and tact in these contacts as well as resourcefulness and firmness where required. These same characteristics, of course, are just as essential in his daily contacts within the plant. The factory accountant should work in complete harmony with the plant manager on all matters pertaining to hours of work, industrial relations policies, salary ranges, etc. However, as to the kind of accounting methods used at the plant or the system of internal control or the types of reports to be made, these are dictated by the general office staff accounting organization in order that uniformity of procedure may be maintained at all plants.

Principal Functions

The functions of the factory accountant may be divided into four main categories.

1. Supervision of the routine office work.
2. Audit and financial control.
3. The preparation and distribution of reports.
4. Advice and assistance rendered to the local management of the plant.

Routine Office Work

The first function pertains to the supervision of routine office duties. It includes the timekeeping and payroll work, the verification of invoices as to receipt of materials, including correctness

of prices, etc., keeping of records of inventories and other plant assets, records of production, records of capital expenditures, the computation of manufacturing costs, the supervision of the taking and valuing of inventories, etc. A most important requirement in this routine phase is the need for keeping the work up to date at all times, as invoices must be paid promptly in order to secure allowable cash discounts and payrolls must be met on schedule. Since the factory accountant is the head of a fairly large department, representing a substantial item in factory overhead cost, he is expected to be constantly on the alert to improve the efficiency of his organization, to develop better office methods and routine, and to make use of such mechanical office equipment as will result in lower operating costs or will provide more complete accounting data sooner. This phase of the work, though routine in nature, thus constitutes an important function, especially since it is the basis for the preparation of most reports and for the formulation of managerial decisions.

Audit and Financial Control

The second function pertains to audit and financial control and is basically that of safeguarding the assets used in the factory operations. In this connection, the most obvious duty is to be sure that all materials leaving the plant, whether in freight cars, trucks, or otherwise, are properly billed and that the factory operations receive due credit therefor. This function is also closely related to the responsibility for authorizing cash disbursements for the value of materials and services actually received, or for amounts due employees in accordance with authorized wage and salary policies.

The factory accountant is expected to watch carefully expenditures against appropriations authorized by the board of directors for capital purposes. Such expenditures must not exceed the amount appropriated. He or his representative should follow the progress of construction jobs to be certain that expenditures chargeable to the appropriation are not being shunted off to expense classifications, or vice versa. Whenever current expenditures and commitments on an appropriation, plus estimates of future expenditures, indicate a possible overrun, the factory accountant should bring it to the attention of the plant manager so that the situation

may be corrected, either by decreased future expenditures or by an additional authorization. If the situation remains uncorrected, the factory accountant should exercise his authority to have the work stopped.

A part of audit and control is the development of figures which will be used in determining insurable values for the plant property. We have a regular insurance department in our general office which actually places this insurance. This department, however, relies on the factories for accurate reports of insurable values as inventories and other assets fluctuate. Through such reports, we can fully cover the risks involved and avoid wasting money in premiums for over-coverage.

Of importance in the function of audit and control is the establishment of systems of internal control devised to minimize the opportunities for misuse of company funds or other assets. Properly designed, a system of internal control should bring to light promptly any misuse of company assets, whether intentional or through error. In principle, a good system of internal control relies upon the distribution of the work among various individuals in the office so that no one person has exclusive control over all important phases of any business transaction. The factory accountant should be fully aware of the value of developing internal control procedures wherever the situation warrants and should frequently review such procedures to see that they remain effective under changing conditions.

The factory accountant must also serve as a sort of traffic cop to see that company policies and procedures which have been established by higher authority, particularly those which involve the expenditures of funds, are regularly and faithfully carried out in the local operation. It is of vital importance that, wherever possible, uniform methods and procedures be followed at all locations. We operate on the principle that no one in a local operation has the authority to change standing instructions without referring the matter to the general office for approval. We believe that our factory accountants are well placed to observe and report any deviation from established instructions and policies, whether intentional or unintentional. Actually most deviations are of the latter type.

Preparation and Distribution of Reports

The third function pertains to the preparation and distribution of reports. The purpose of these reports is, of course, to provide, first, an historical record of the results of operations and of their effect on the financial investment, and secondly, a record of performance to indicate how well or how poorly the operations have been conducted. Among such reports are the following:

1. Statistical data relative to employment, such as, number of men on the payroll by departments, by occupations, etc., their weekly and hourly earnings, the cost of overtime payments, etc.
2. Reports on costs of production, classified as to material, labor, and factory overhead with such further subdivisions as may be most appropriate and useful. Included in these reports would be data on costs in excess of established standards or budgets, costs of labor allowances or pay beyond that due under an incentive system, scrap losses in excess of normal practice, high overhead costs, etc.
3. Reports pertaining to property investment including capital expenditures, machinery and equipment sold or scrapped, etc.
4. Reports on investment in inventories including raw materials, work in process, and finished products.
5. Reports required for governmental purposes such as social security, unemployment compensation, income tax withholding, etc.
6. Special reports of one kind or another.

Role in Management

In the three functions already described, namely, supervision of the routine office work, audit and financial control, and the preparation and distribution of reports, there is, of course, a managerial element involved. However, the part which the factory accountant plays as a member of the general management team is of such importance that in effect it constitutes a separate function.

The factory accountant's associates at the managerial level include the plant manager and his first assistants, the production manager, chief mechanical engineer, chief product design engineer,

material controller, superintendent of foundry, general foreman of forge shop, general foreman of machining and assembling departments, works buyer, manager of industrial relations or, in the case of a steel mill, the superintendents of blast furnaces, open hearth furnaces, blooming mill or merchant mill, etc. Many of these men are specialists responsible for certain definite phases of the plant's operations. The various functions of these men are brought into coordination by the plant manager and his first assistants. To help in this coordination, staff meetings are frequently called. The factory accountant as a member of the plant staff is able to make important contributions. Having full responsibility for the accounting work, he has knowledge of the records and reports and thus has a broad picture of the entire plant operation. Since he is fully informed of the results of current operations, how these compare with past operations, and in what respects they deviate from the past, he is able to keep his managerial associates posted as to the results of operation. He should also be able to indicate to them what the general trend in operations appears to be or, expressed in another way, to point out to them the direction in which the plant is heading. This kind of information, if sound and well founded, is of far greater importance to the plant manager and the staff than data regarding past operations only.

Expressed in a few words, the factory accountant fulfills his function as a member of management whenever he devotes his energies and experience to help in the solution of those problems which always face the plant management. Among these are:

1. How can the factory be operated more efficiently?
2. How can it obtain better costs or better product?
3. How can it become a more satisfactory unit of production to all interested groups; viz., the owners of the business, the employees, and the customers.

To be wholly successful, the factory accountant should ascertain the kind of information the plant management should have to operate effectively and should be able to obtain that information quickly and accurately. Furthermore, he should be able to interpret that information to management clearly and tactfully in an operating man's language rather than in technical accounting terms.

Costs in Relation to Managerial Problems

Specifically there are many situations in which the factory accountant can be of important assistance to his associates on the local managerial team. Obviously, the first subject which comes to mind on which the factory accountant has a vital contribution to make in management counsels is that of costs. It is important for him to consider production costs not only from the standpoint of their effect on the financial results of the plant operations, but also from two additional standpoints, namely, their relation to questions of company policy and the making of business decisions, and their relation to the day-by-day control of plant operations.

In the normal course of business, management is frequently faced with several alternatives and with the necessity of making a decision, one way or the other. The success or failure of a business is usually dependent upon the degree of wisdom displayed by management in making such decisions. Some typical alternatives faced by management are:

1. Cutting the price on a single order or making a general price cut.
2. Raising prices generally or on a selective basis.
3. Spending additional sums for advertising, for sales effort, or for promotion in order to enlarge the volume of business and keep plants running at higher capacity.
4. Changing the design or improving the quality of a given product.
5. Increasing or decreasing production of certain lines.
6. Taking on the manufacture of more component parts of a finished article, instead of purchasing them from a supplier, or vice versa, etc.

Before making a decision relative to such questions, management should be armed with the best factual data. Ordinary cost data which may be useful for certain purposes may be very misleading when consideration is being given alternative courses of action. In such cases, it may be necessary to prepare special cost data which are definitely related to the problem under consideration.

This brings us to the point that, in supplying cost data of any kind, it is important that the factory accountant know the purpose for which they are to be used. It is sometimes difficult for oper-

ating men to appreciate that there may be a number of kinds of costs, each one appropriate and correct for the purpose for which it is intended, but incorrect and misleading if applied to the wrong situation. What are some of these different types of costs? A few of those most frequently used are discussed below.

Marginal Costs

The first type of cost I am going to discuss is known by many terms, such as, "specific cost," "marginal cost," "out-of-pocket cost," "differential cost," etc. It includes the costs of direct material and direct labor, as well as that part of the factory overhead which will be affected by the manufacture or nonmanufacture of the particular product in question. It does not include any of those items of fixed or constant costs which would continue whether the product was produced or not. This type of cost is useful and important and comes into play whenever there is a question of manufacturing or purchasing some component part or assembly, or a question of whether to produce a larger output of standard products which are possibly salable only at a sacrifice from regular prices. For example, if a question arises as to what added costs are involved by increasing production, it may be determined by estimating the total cost of the larger output and subtracting therefrom the total cost of producing the smaller output. This difference represents the out-of-pocket costs or differential costs of the increased output. Such costs are lower than costs as regularly computed because of the fact that they contain no element representing the fixed and constant costs of doing business, such as, fixed charges on plant and equipment, and constant costs of the stand-by organization, etc. Frequently, it will be found profitable to take added volume at a reduced price, or to extend the manufacturing schedule to cover items previously purchased, in order to make a fuller use of the stand-by equipment, and the stand-by organization.

It is apparent that this type of cost must be carefully computed and intelligently applied. Furthermore, since its essential feature is the cost effect of unused stand-by capacity, decisions based upon this type of costs must be subject to constant review and reconsideration if the situation as to unused capacity should be materially changed.

A further danger in using differential costs when making decisions of this kind is that the operating men may become confused and regard a cost calculated on the differential, or "out-of-pocket" basis as the true cost of the product. The factory accountant must bring home to the management the fact that in the routine costing, such products will have to bear their full share of the plant overhead. This is often a difficult point to explain to factory men, especially to product engineers charged with the responsibility of designing a low-cost product. The product engineer may be surprised when he discovers that although the company may be better off from an over-all standpoint by manufacturing, instead of purchasing, a given part, the particular part itself may end up with a higher actual cost than the purchase cost. For example:

	Purchase Cost	*Out-of-Pocket Cost*	*Actual or Current Cost*
Material	$3.00	$1.25	$1.25
Labor	....	1.00	1.00
Plant Overhead	....	.40	1.00
	$3.00	$2.65	$3.25

It is naturally difficult for nonaccounting men to realize that there is a benefit to the company in the above case when they compare the $3.25 actual, or current, cost of manufacture with the previous purchase cost of $3.00. The factory accountant must convince them that, even though this is true, the benefit is a real one and is measured by the lowering of overhead costs on all the plant product because of the higher production and the broader base of overhead distribution.

Costs for Inventories

A cost of another type regularly used is the inventory cost, which seldom ties in with costs as regularly computed, because of the desirability of including only a normal amount of overhead and of pricing the material content of inventory on some special basis such as cost or market, whichever is lower. It is usually considered that in establishing a cost for the pricing of inventories of work in process or finished product, it is necessary to determine a fair

valuation on the basis of an efficient operation. To do otherwise would mean that the less efficient a plant may be, with consequent higher costs, the greater the values that would be assigned the inventories of that plant at the close of the accounting period. A conservative cost for inventory purposes might include the actual cost of materials (or market value, if that is lower), costs of labor on an efficient operating basis, and costs of factory overhead on a basis of a reasonable percentage of full capacity, with all abnormal costs excluded.

Costs for Pricing

Still another type of cost is that used as a basis for establishing selling prices. I am sure that all of us hope that we may sometime, in the not too far distant future, get back to the situation where we will be able to set selling prices following cost considerations and market factors, and where it will no longer be necessary for OPA to control prices. When normal conditions return, a company must follow a policy in establishing a schedule of selling prices which, over a cycle of years (including good and bad years), will yield on the average a fair return on the investment. Obviously selling prices cannot be based on the actual costs for each year, for on such a basis prices would be highest in years of depression when production is low and manufacturing costs are high. Selling prices must be established on some other basis which recognizes the fluctuations in demand and rate of production during the business cycle.

We follow the practice of establishing costs for pricing purposes on a "normal" basis. Such a cost is in effect a weighted average cost over a period of years, or it might be expressed as the estimated cost which should be attained if production and all operating conditions could be leveled off from one year to another. Such a cost tends to be less than the actual cost in years of low production and more than the actual cost in years of peak production. The factory accountant will appreciate the purpose for which "normal" costs are designed and will know in what type of managerial problem such a cost may be used properly.

Historical Costs

Still another type of cost is the actual or historical cost of pro-

duction. This actual cost may be a relatively high or low cost, depending on material prices, labor rates, efficiency, whether or not the plant is operating at capacity or substantially below it, etc. An actual cost, which may be for a weekly period, a four-week period, a calendar month, a quarter, or a year, is useful and necessary in making comparisons with predetermined standards, or with performance in prior periods. It may not be useful, and may even be misleading and dangerous, if used as a substitute for differential or out-of-pocket costs, or as a basis for fixing inventory valuations or sales prices.

Budget Costs

There is one more kind of cost to which I should like to refer. This is the budgeted cost, or standard cost, as it is usually called. A standard cost is determined in advance of production and indicates the cost which should be attained if the plant operates at normal efficiency. In preparing a standard cost, material, labor, and other cost components are included on the basis of a standard or efficient performance. The actual costs are analyzed in such a manner as to reflect the variations from the predetermined standards.

This type of costing produces a budget cost, not only for the plant as a whole, but for each department or production center, making allowance for the effect of fluctuations in production. A budget cost for a department would show what costs should be realized if efficiency is maintained, under various assumed rates of production. Properly designed, it points out to each part of the plant management the objective which should be readily possible to determine in what respect the performance was not up to par so that corrective measures may be applied. By concentrating on the variations from the standards set, and determining the reasons for these variations as they develop, accounting control over operating expenditures is achieved.

To attain effective cost control, it is important to set standards of performance in advance and determine what the costs should be. Under a well-developed standard cost system, the plant management should be able to concentrate on inefficiencies, on variations from standard performances, and on unfavorable trends.

Corrective measures may thus be applied in the early stages before an unfavorable situation becomes static.

Almost all companies make use of the principle of standards, whether they actually use a standard cost system or not. Every time piece-work prices are set, or material specifications are drawn up for a particular part, standards are created. Every time an estimated cost is computed for a part contemplated to be put in production, a standard is set for such part. The essential thing is that every opportunity be explored for increasing the effectiveness of accounting controls. The factory accountant who is on top of his job will keep this in mind at all times, as he knows that any unfavorable departure from standards is reflected directly in the company's profit and loss statement.

Re-examination of Postwar Costs

I believe a special word about costs in the present situation of industry may be in order. In all discussions of relative costs, it is important in these postwar days for the factory accountant to point out that it is not sufficient to take an old basis of cost and add a few differentials to cover changes in material prices and labor rates. Conditions today in many shops are radically different. New methods of manufacturing may have been introduced; new machines may have been installed, involving new processes with perhaps greater output per hour; the efficiency of the workmen in many instances has, we know, decreased during the war. In some plants pay incentives have been removed, and employees are being paid on an hourly rate basis, not directly tied into production, which usually results in lower output per man hour, etc. It is necessary in any cost calculations to re-examine all of the factors upon which the costs are based. In this way it will be found that many of our prewar standards will have to be discarded or radically changed.

Cost Reductions

It is quite a general practice in industry to maintain cost reduction committees at each plant. Such committees operate either intermittently on special problems, or on a full year-round basis, making constant studies of possible opportunities for cost reductions. The cost reduction committee always includes one or more

men from the factory accountant's staff as well as representatives from the engineering, manufacturing, purchasing, or other departments. The factory accountant will naturally keep in close touch with the work of this committee, will advise with it on questions of cost accounting, and will be in position to discuss with the managerial group conclusions which may be drawn from the committee studies.

Cost Comparisons

The factory accountant, as well as other men holding positions of responsibility in the accounting department, should be on guard against the indiscriminate use of convenient ratios of costs or performance. For example, it may be convenient to think of the cost of castings from a foundry or forgings from a forge department as being so much per pound. Similarly, it might be convenient to refer to a workman's output per hour as being so many pounds of metal or other materials, or so many dollars of value. These yardsticks are convenient for purposes of keeping in mind fundamental relationships but can be very misleading when applied to particular cost problems. It would not do to use such yardsticks when a problem arises as to the net cost effect of substituting one kind of material for another, as for example, a forging for a casting, or even a casting of different design for another casting. When comparative costs are properly prepared of the two kinds of castings, it may be found that a lighter casting may actually cost much more than a heavier casting due to higher costs of cores, etc. The factory accountant should know when general yardsticks may be safely used by his managerial associates and when they must be discarded in favor of a more exact cost study.

Costs of Special Runs

From time to time, a plant may be called upon to manufacture a short run of certain products. These products, even though in production for a few hours or a few days, will involve the same setup expenses as a product which may remain in manufacture for a long period. Furthermore, it is usually impossible to attain full efficiency on short runs. There is serious danger that the true cost of products manufactured in small quantities may not be apparent, since many elements of cost are based on prorations and

not on specific allocations. A short run may be benefited by the long continuous schedules of other products, or, expressed in another way, the costs of the products manufactured in large quantities may be penalized by short runs. It is important that the factory accountant point out as nearly as possible the real costs of goods manufactured in small quantities. There may be legitimate trade reasons for not discontinuing them because of possible influence on the sales of other products; nevertheless, the management should be aware of what such a program means from the standpoint of costs and profits.

Estimating Savings on New Equipment

Successful plant operation is dependent upon good management, an efficient working organization, and good tools. The amount included in current costs for tools is often quite substantial, being represented by depreciation, repairs and maintenance, replacement of minor equipment (dies, jigs, fixtures, etc.), power consumption, etc. The factory accountant has data available as to these costs for the plant as a whole, for individual departments, and when necessary even for individual machines. If his department has adequate mechanical office equipment, information can be supplied regularly in considerable detail showing costs of operation, machine loads, and other useful data. Such information is particularly important to the plant engineer and plant manager when questions arise as to possible replacements of machinery, improvements in manufacturing methods and techniques, etc. When requests are made for new machinery or other plant facilities, such requests are usually supported by data showing the expenditures involved and the estimated cost benefits which will result from the proposed program. Such estimates of savings should be prepared by the factory accountant or should have his approval. Later, when the new facility has been installed and is in full operation, the actual cost savings should be computed and compared with the original estimate.

Costing New Products

In our company, the decision to manufacture new products or to make major changes in the design of existing products rests with what we call "new product committees." It is the function of the factory accountant to furnish these committees with detailed

analyses of costs which will bring out the reasons for differences in costs between new and old products. Such differences in cost may be due to the use of different materials, to purchasing a part for the new machine as against manufacturing the old part, to changes in processing or in the finish of the part, to new or changed labor operations, to more or less rigid inspection requirements, etc. Pointing out to these committees the effect in detail of each of these elements is tremendously helpful to them in their job of designing a low-cost product.

Labor Costs and Labor Efficiency

With the general unionization of most shop employees in factories and with the growing trend toward unionization of office employees, the factory accountant must be familiar with the overall policy of the company with respect to union negotiations. He should be in a position to discuss intelligently with his managerial associates the cost effect of union demands for increases in pay, for liberalization of vacations and employee plans, for changes in hours or working conditions. He should also be in a position to point out the cost effect of inefficiencies on the part of the workmen which may be a matter for discussion in the bargaining negotiations. Completion of negotiations between union and company frequently results in some adjustment in pay or liberalization of some kind. Retroactive pay awards or other financial adjustments which may be involved then become primarily the factory accountant's responsibility to settle quickly, fairly, and accurately.

The factory accountant should be familiar with state unemployment compensation plans, particularly as to their impact on production costs. In most states merit rating systems influence the cost of these plans, being lowest for those companies which have wide fluctuations in employment. Necessarily, employment must be related to customer demand and cannot long continue on a basis widely different from that demand. However, intelligent and courageous planning makes possible a much more stable schedule of employment and production, with consequent savings in unemployment costs. The factory accountant is in a position to point out to management what these savings might be and what they mean per unit of product.

Conclusion

In this paper I have attempted to sketch some of the responsibilities of the factory accountant, his relationship to his associates in factory management, and some of his opportunities. Consideration of these points is very timely just now, even though some of them may seem rather obvious. During the war, a dangerous philosophy developed which placed emphasis on production without serious regard to cost. As a consequence of the abandonment or neglect of cost control principles, many added costs have been incurred. Some of the factors which contributed to these added costs were excessive amounts of overtime which the employees were permitted to work with a consequent lowering of efficiency, overly rigid inspection of the product because of lack of experience on the part of some inspectors, purchasing materials at higher prices than normal from sources not ordinarily used, using materials out of place to speed production, and other reasons. Habits of extravagance have crept in, partially condoned, no doubt, by the feeling that, under a period of extremely high income taxes, expenditures which were "deductible" were thereby rendered excusable. We can no longer afford to think of producing a large volume of goods if the cost of the production is seriously out of line with sales prices. It is the responsibility of the factory accountant, together with other members of the managerial team, to re-establish sound cost control practices which will eliminate these excessive costs. The factory accountant can make his contribution to this effort by constantly pointing out to management the areas in which cost penalties are being incurred by comparison with efficient prewar practice, and where economies can be made.

I have attempted to demonstrate that the complexity of modern factory operation demands a variety of specialized accounting data as well as more reliable accounting information regularly furnished and properly interpreted by the factory accountant to guide management in its day-by-day decision. It is my belief that almost unlimited opportunities exist for the factory accountant to enhance still further his value as a member of management during the period ahead.

CASE STUDY OF PAYROLL PRACTICES AND PROCEDURES

By I. J. Nicholas Zavodney, Supervisor of Business Methods, Western Electric Co., Inc., Hawthorne Works, Chicago, Ill.

THE purpose of this paper is to present a subject of ever-increasing importance to any business man who has a payroll of any size. It is not so long ago when payroll problems were relatively simple. Most of us recall that cost and accounting texts were concerned more about the payroll as a factor of costs rather than stressing the importance of simplifying payroll procedures not only to meet the payroll on time, but to establish a foundation that could be altered or modified, without necessitating a complete rebuilding of the cost and accounting structures.

The subject of payroll methods and procedures can be approached from several viewpoints, and considerable time could be spent in dealing with recent changes in legislation, both state and federal, as well as the many executive orders that may or may not affect a concern's policies and practices. I shall attempt to present in very general terms something about the payroll methods and procedures employed by the manufacturing department of our company, including some of the reasons for our adopting the specific practices. I shall not dwell on the specific detailed computations of the payroll, but rather on the organizational structure, the tools employed, and the procedures followed in the preparation of the hourly payroll. This is only one of three types of payrolls that we have, but it is the largest and the most complex. The two other types are the weekly and monthly payrolls, which are used in the payment of the clerical, supervisory, and administrative employees of our company.

The degree of complexity of the payroll organization is dependent, in my opinion, on three major factors: First, the extent to which the standard hourly rate is supplemented by changes in rates, either through progression systems that are commonly negotiated by labor unions or through systematic upgradings or changes in rates; second, the extent to which the hourly system is supplemented by an incentive system and the complexity of the incentive system; and third, the extent to which payroll deduction services

are being rendered to employees. In addition to these factors the structure of the payroll organization must be flexible to permit a systematic arrangement of the flow of work.

Standardizing Work Week and Schedule

Before we proceed with the specific discussion of the type of procedure for hourly rated employees, as employed by our company, it may be well to discuss the complexity of our payroll computation in order to visualize the task which confronts us and also to maintain a constant comparison with specific problems in other plants. Those connected with a manufacturing organization of any size, I believe, will recognize our policies as commonly accepted in the manufacturing industry. Most of our policies have been standardized for a number of years, and some have been modified to fit in with recent legislative and War Labor Board changes.

First of all, we attempt to standardize and clearly define the work week and the standard working schedule. The work week starts at midnight Sunday and ends at midnight of the following Sunday. The first five scheduled tours of duty in the work week constitute an employee's standard weekly work schedule. We found it necessary during this emergency to operate at capacity level on a minimum of a six-day weekly schedule. All hours worked over standard, that is, over eight in one day or over forty in one week, are paid on a premium basis.

Job Analysis and Grading

We have adopted a system of occupational titles and job grading. The occupational title covers a class of work being performed, the description of which should be stated in terms that will enable those unfamiliar with the work to visualize it clearly. In addition to the occupational titles, we employ a labor grading plan which divides all our hourly rated jobs into a specific number of non-supervisory grades. This grading plan recognizes that certain jobs are of greater value than others and that people performing the duties of the higher valued jobs should receive more pay than those performing the duties of lower valued jobs. The relative value of a job is considered to depend upon skill, effort, responsibility, and job conditions which are present in varying degrees. A wage survey is made periodically at each manufacturing area, and based

upon the prevailing rates, starting and job rates are established for each grade. Progression within these rate ranges is made at periodic intervals in accordance with the negotiated union contract and the wage policy approved by the War Labor Board.

Overtime and Premium Payments

The premium payment policy of our company is in accordance with current labor legislation, such as the Walsh-Healy Act which provides for the payment of premiums after eight hours of work in any twenty-four-hour period and over forty hours in any one week as well as the provision for a premium payment for sixth and seventh tour of duty within a work week. This policy, I believe, is quite common among manufacturing industries. In addition to this common premium policy, the nature of some of our operations is such that it is necessary to maintain continuous operations around the clock, and the organization of our plant is such that we have our own internal police and fire-fighting forces, so that it becomes necessary to have someone on duty continuously. These conditions have brought about a modification of our standard rate to include a premium payment for each of these conditions. Consequently, we have adopted a so-called "night work bonus" policy and a "seven-day coverage" policy to compensate the employees on such assignments over and above the standard rate of pay. In order to administer the payment justly and correctly, we define as clearly as we can in our company instructions each of these two conditions. "Night work bonus" hours are defined as all hours between 3:00 p. m. and 8:00 a. m. for those tours for which the standard starting or stopping time is between 6:00 p. m. and 6:00 a. m. "Seven-day coverage" jobs are defined as those where the nature of the work or demands of the business require operation of a seven-day work week or where special or rotating shifts are used, which frequently include work on calendar Saturdays or Sundays as part of the employees' standard five-day weekly schedule. Payment for each of these conditions is made by means of a specified percentage which is applied to the standard earned hourly rate. I believe that you can conclude from what I have said that by virtue of establishing a standard rate of pay for an individual, it is possible to rotate him on various shifts and jobs, so long as he remains in the same grade, without changing

his rate of pay and at the same time reimburse him adequately for the work performed.

Incentive Pay

Our incentive system, which we call group piece work, provides equitable treatment for all of the employees working together in what we term a pay group. The piece rates are generally expressed in terms of credit hours for one hundred good parts produced instead of dollars. The total credit hours for each group are compared with the total actual hours worked by the group, and the excess of credit hours over actual hours is converted into a percentage of piece-work earnings. This percentage is applied to the piece-work base earnings of each individual (actual piece-work hours times standard rate of pay) and added to each individual's base pay. Each week during the month an increment percentage based on estimated earnings is paid, and a final adjustment to actual earnings is made at the close of the month.

Payroll Deductions

Our company offers a liberal plan of payroll deductions, all of which, with the exception of social security and withholding tax, are elected and authorized voluntarily by the employee. He signs a deduction card authorizing the company to make the deductions. He may cancel the authorization at any time upon written notice. Some of the more common deductions are for war bonds, hospitalization, life insurance, credit union, and savings and loan association. Those are the major factors that determine the complexity of our payroll job, and you will note their effect as we go into the more detailed routines. However, before going on to that phase, I should like to explain the structure of our organizations since this has a very definite bearing on our payroll procedures.

Payroll Organization

The unit of organization is the operating department. As previously stated, the hourly piece-work employees are grouped into pay groups. Each operating department has at least one but usually several pay groups. Generally, associated with each operating department is a payroll shop clerical unit which reports to the works comptroller and performs all clerical services for the

operating foreman. This unit is located adjacent to the operating department and is composed of shop clerks and payroll clerks. The former maintain attendance records, reconcile clock cards with time tickets, or works assignment cards, and render all clerical services required by the operating foreman. The payroll clerks compute the weekly gross earnings, determine the amount of withholding tax, and record and maintain individual employee's earnings.

The central payroll and financial organization prepares the payroll, issues and distributes the pay drafts, operates the draft cashing stations, and posts tax items to the social security and withholding tax records. The tabulating department, while not entering directly into the payroll routine, does maintain tabulating cards carrying complete personnel and earnings information of each employee. These cards are used to compile rate review sheets, wage survey data, employees' census, and similar tabulations. Incidentally, we are studying the possibility of extending the use of tabulating equipment in our payroll work.

Summarizing our payroll organizational structure we find that it is subdivided into four separate functions: first, recording of hours worked; second, computing earnings; third, preparing payroll; and fourth, furnishing statistical reports.

Basis of System

It might be well to state here that in our establishment of methods and procedures we have found that the simplest procedures are those that can be reduced to common denominators and that the fewer the number, the simpler the system. Our system is constructed around two common denominators, and it employs two common vehicles or tools which are the keys to our payroll job. The two common denominators are the actual hours worked and the basic standard hourly rate of pay. The two common tools are the clock card and the addressograph plate. The clock card contains not only the clock registrations, but it also provides for all of the possible computations of gross pay. The basic standard earnings are the product of actual hours worked extended at the standard hourly rate. All other factors of total pay, such as piece-work incentive earnings, overtime pay, night work bonus, and seven-day coverage bonus, are superimposed on the standard

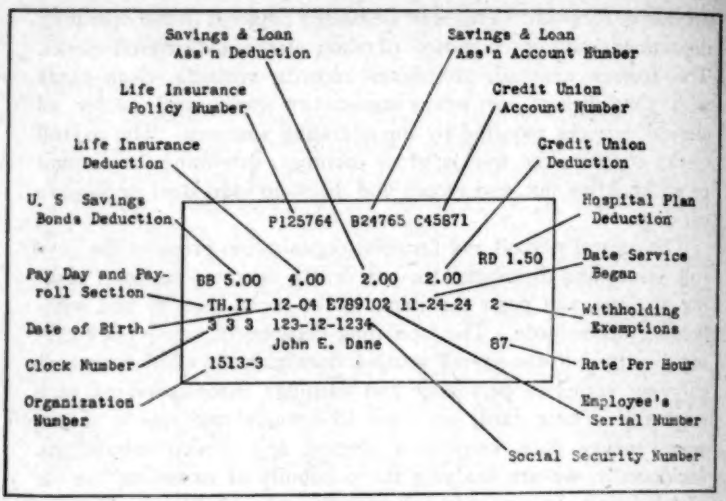

EXHIBIT 1

base pay and appear separately on the clock card. The addressograph plate bears the essential employment history, such as date of birth, hiring date, present rate, previous rate, date of last change, clock number, employee number, social security number, withholding code, and all regular deductions.

Bearing in mind that the problem before us is compilation of payroll for approximately 20,000 employees, every day is a payday in our plant. The hourly roll paydays are from Tuesday to Friday inclusive. The clock cards are removed from the departmental rack at the close of the week. The first payday is the following Tuesday, so you can visualize that we are operating on a very close schedule. By virtue of the close schedule and in order to even the load on our mechanical equipment, we attempt to precompute and record all standard or nonvariable information, and then plan the flow of papers so that the variable information from the clock card may be added very easily and quickly.

Addressograph Plate and Deduction Sheet

The addressograph plate (Exhibit 1) is used in preparing the clock cards, work assignment cards, attendance records, payroll

sheets, payroll deduction sheets, pay drafts, earning and tax records, rate review sheets, and social security reports. It is obviously important to run such records as far in advance as possible and schedule them so as to load the facilities most efficiently. As part of our plan to precompute standard information in advance, the deduction sheets (Exhibit 2) are addressographed in quadruplicate about a week ahead of the payroll date. A set is run for each department listing employees in clock number order and, opposite the employee's name, in columns, the deductions to be made on the roll in question. Since not all deductions are made weekly, it is necessary, of course, to use masks to block out undesired information.

After the addressographing in finished, any special or nonrecurring deductions are posted manually. The duplicate copy, which we call the "dummy roll," is removed immediately and forwarded to the payroll unit serving the operating department where, as we shall see shortly, it is used in computing the earnings and preparing the clock cards for compilation of the payroll. The triplicate copy is later sent to the local savings and loan association with the remittance to cover deductions made. Similarly, the fourth copy is sent to the local credit union. Each copy is spot-carboned to reveal only information needed by the recipient.

Before the addressograph plates are put away, the payroll sheets (Exhibit 3) are also run. These are triplicate combinations with six accounts to the strip and are imprinted with the name, department number, clock number, rate per hour, etc., but no deduction information is imprinted at this time. The payroll sheets and the three remaining copies of the deduction sheets are associated and held until the clock cards are received. However, in order that you may observe these operations in their normal sequence, let us take the case of a newly hired employee whom we shall call Bob, and follow his case from the time he is employed until he cashes his first pay draft.

New Employee Procedure

We start in the employment office where Bob is requested to fill in his withholding tax exemption certificate. A "notification of new employee" form is originated, and a copy is given to Bob as a pass to his department the day he reports for work. The original

DEDUCTIONS TO BE MADE FROM PAY ROLL
1
OTHER
TH.11
333
1553-3
2
87
4.00
2.00
2.00
2.00
2.00
Imprinted from lower four lines of plate
Imprinted from upper four lines of plate

EXHIBIT 2

Addressographed
Payroll Machines
Earnings
Deductions
Amount of pay draft
TH.11 E789102
333 123-12-1234
1513-3 JOHN E. DANE
87
OCT. 21, 1945
PAY ROLL
EARNINGS CODE
HRS. DAYS
AMOUNTS AND DEDUCTIONS
DM 48 $ *41.76 EOC
OA 4 $ **3.48 EOC
$ *45.24 GROSS
$ **0.45
$ **5.30 F T
$ **5.00 S B
$ **4.00 I
$ **2.00 B&L
$ **2.00 CU
$ **1.50 AO2
$ *24.99
AMOUNT TAXABLE $
AMT. NON-TAXABLE $

EXHIBIT 3

copy is routed through the line of supervision for the required level of approval for the rate of pay involved. When Bob arrives in his new department, he presents his pass slip to the shop clerk who originates a clock card (Exhibit 4), an attendance record card, and a weekly work assignment card (Exhibit 5). The clerk

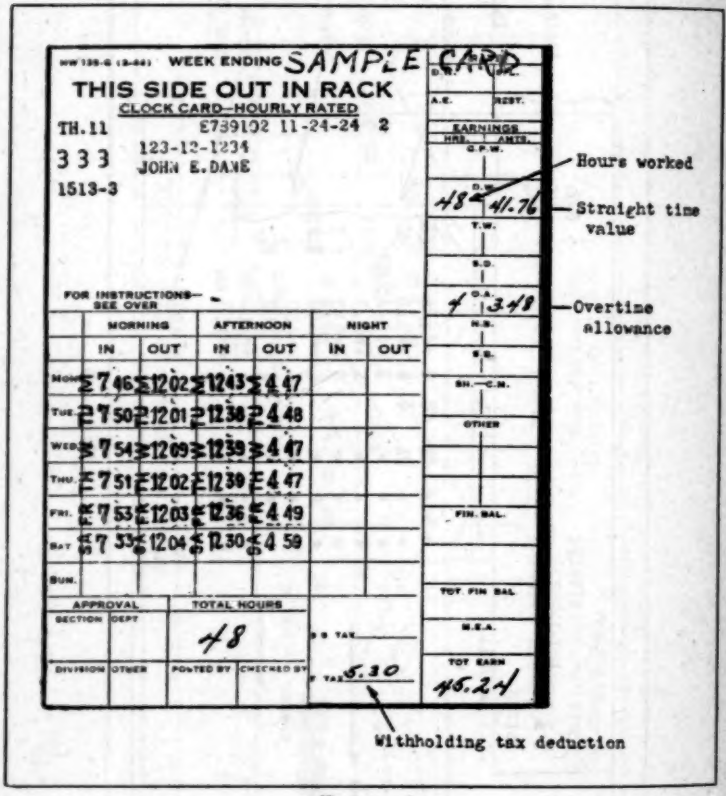

EXHIBIT 4

then forwards the pass slip back to the employment department. The clock card goes into the clock rack where Bob will register "In" and "Out" at the beginning and end of each shift and for lunch hour. The assignment card goes to his immediate super-

visor, who will account for all of Bob's time each day by entering the number of hours worked on each productive order as well as time spent in visits to the company hospital, personnel interviews, and other activities for which the time is not charged directly to a productive order. The attendance record remains in the clerical unit, and at the end of the week, absences, lates, and earnings will be posted to it from the clock card.

Rate Card

The original copy of the "notification of new employee," meanwhile, is also rerouted to the employment department for the purpose of originating a rate card which will become the perma-

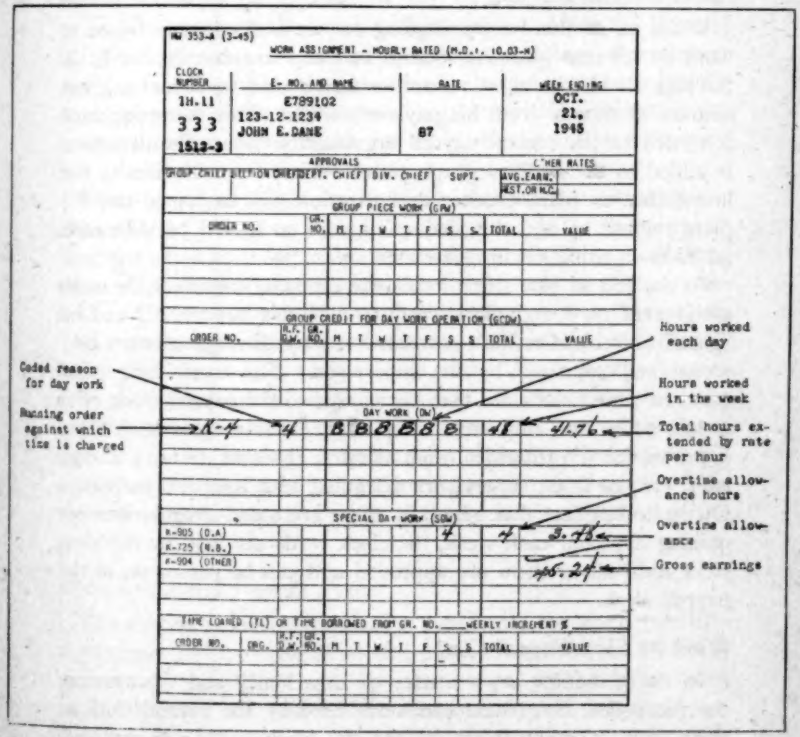

EXHIBIT 5

nent and master record of Bob's occupation assignments, job grades, and rates of pay during his period of service with the company. The rate card is forwarded to the central payroll organization where the master file is maintained. On this rate card will be posted every change in occupation, job grade, or base rate.

From the rate card the central payroll organization prepares the addressograph plate which at this point contains such information as name, department, clock number, pay day, rate per hour, date of birth, social security number, and withholding tax exemption code.

Authorizing Deductions

While all of this has been going on, we find our new friend at work on his new job. As soon as he elects to subscribe for U. S. Savings Bonds, he signs an authorization card to deduct a given amount of money from his pay each week. This deduction card is routed to the central payroll organization where the deduction is added to the addressograph plate. When he subscribes to the hospitalization plan, another authorization will be issued and his plate revised to add this deduction, and so it will be with each addition or reduction in deductions.

At the end of Bob's first week, the shop clerk receives the work assignment card and clock card from Bob's supervisor, and he "gaps" or reconciles the two records. Any discrepancies are corrected and approved by the supervisor. The work assignment cards or time tickets are then forwarded to the payroll clerk, who is located in the shop unit. The clock cards are forwarded for approval for irregularities, such as lates, absences, failures to register, etc., to those supervisors delegated such approval authority. Owing to the fact that generally there are some irregularities requiring approval each week, the clock cards are held by the shop clerk until all of them are approved and can be passed on to the payroll clerk.

Work of Shop Payroll Clerk

In the meantime, as a matter of expediency and time saving, the reconciled assignment cards are used by the payroll clerk to start payroll computations before the clock cards are received.

First, the assignment cards are arranged in the order of the listing on the dummy roll, which, as I have mentioned before, was routed to the payroll clerk several days earlier. During the arranging operations, the hourly rates, addressographed on the assignment cards, are checked against the dummy roll, and variations are corrected. Variations are possible because of the fact that the assignment cards may have been addressographed a week or so earlier, and subsequent rate changes could have occurred. After the verification of the rate, the number of standard and overtime hours worked and the total hours to be paid are determined. A calculating machine operator extends the hours to be paid by the hourly rate, increases this by the estimated incentive percentage, and further increases the product by the night bonus and seven-day coverage percentages if either or both apply. After the close of the month the actual earnings incentive percentage representing the piece-work earnings is determined. It is necessary to include an adjustment in the current week's pay for the earnings of the previous weeks of the month for which the incentive percentage was estimated.

When the clock cards are received, each of the various types of earnings is posted on them in spaces provided for this purpose. The sum of all of these computations represents Bob's gross earnings, which is also posted to the card. By reference to a withholding tax table, the amount of withholding tax is determined. This is based upon Bob's gross earnings and his withholding code, both of which are now on the clock card. The last payroll operation performed in the shop payroll unit is summarization of the grand total of gross earnings and deductions for Bob's department and the posting of these amounts on a summary card which will accompany all the cards to the central payroll organization. This summary card serves as one of our checks for completeness of the payroll.

Work of Central Payroll Unit

The central payroll organization subdivides the gross pay into the various types of payments and posts these items on the summary card. The clock cards being arranged in the order listed on the "dummy roll," any additions or transfers of new employees must be added to the roll by the payroll clerk in the shop units

so that the prerun payroll and deduction sheets can be associated with the cards and "dummy roll." At this point a check is made to determine whether net earnings of each individual are sufficient to cover all deductions. It occasionally happens that, due to unpaid absences, deductions exceed earnings and must be crossed off on the basis of a preferential deduction schedule until those remaining total less than the earnings. Cards at the bottom of the stack and not appearing on the prerun deduction sheets are entered in longhand. When the editing is completed, the deduction columns on the original are totaled, crossfooted, and entered on a payroll summary sheet by type of education. The earnings totals from the summary card which accompanied the clock cards are also entered on this summary sheet. This should be noted because it is the second step in proving the accuracy of the final payroll, as discussed later.

Work of Payroll Machines

At this point we move over to the payroll machines for the actual preparation of the payroll. In this group we use a battery of nine payroll machines. The operator places the stack of cards in the rack or hopper, places the corresponding deduction sheet in a holder alongside the hopper, and inserts the corresponding payroll form in the machine. I have mentioned that the clock cards must be in the order listed on the deduction sheets (Exhibit 4). This is important because the operator does not stop to verify the number on the clock card with that on the deduction sheet and payroll sheet. Taking it for granted that they are correctly arranged, the payroll machine operator posts the earnings data from the clock card, the deductions, individually from the deduction sheet, and, by operating the machine, arrives at the net earnings figure which will be paid.

After completing the sheets for the clock cards of Bob's department, the operator inserts the payroll summary sheet, which was orginated during the editing operation, and imprints opposite the longhand entries the machine totals for each item. Usually they agree and all is well, but occasionally they vary, and the error must be located. In such cases the common denominator of hours worked is a great help in that a check is made of hours, and usually the error is detected. When this balance is completed, we know

that our payroll sheets are in agreement with the earnings computed by the payroll clerk and with the deductions listed on the deduction sheets. The next proof required is that the net payments authorized on the payroll must check with the amount of pay drafts issued.

By midafternoon all payroll sheets are completed and routed. The original goes into the permanent payroll file, the triplicate is separated into individual pay details or receipts and delivered to Bob's department for distribution to the employees the following morning, and the duplicate, with the payroll summary, passes on to the draft-writing group.

Pay Drafts

We use checkwriting equipment for writing our pay drafts and posting machines for posting the record of earnings and tax deductions. We have four machines for drafts and six for posting the records. The pay drafts, too, are addressographed in advance, arranged in order of listing on the deduction sheet, and bundled so that as the first set of payroll sheets is received, the corresponding bundle of drafts is selected and completed on the machines by entering the amount from the payroll sheet and imprinting the signature. As the drafts for Bob's department are completed, the machine total is compared with the payroll summary sheet as a verification that the value of drafts written agrees with the net payroll total. Now we know that a draft has been prepared for each employee on the roll and in the correct amount.

By the end of the day the bundle of drafts is lying on the paymaster's desk, but they are not yet ready to be delivered to the employees the following day. Our paymasters have fixed routes or departments to be covered each day. Also, they have lists of the drafts which are mailed to banks and, in addition, receive "stops" or "holds" when for some reason, such as absence of the employees, certain drafts are not to be delivered. Upon returning from their routes, they run through the drafts for the following day and remove any that are not to go out. By the end of the day they are finished and the payroll is ready.

Statement of Earnings

The individual pay detail slips are routed to Bob's department.

The detail slip which is given to Bob on payday is his statement of earnings and remains in his possession. When he shows it to his paymaster, who visits the department later in the day, and when he is properly identified, he receives his first pay draft. He may cash this at one of several cashing stations operated within the plant or he may cash it like any other check at the neighborhood grocer or drug store. In fact, if he wishes, the company will mail the check each week to any bank of his choosing.

So far as Bob is concerned this finishes the payroll job. He has worked a week; he has a receipt for his earnings and he has his pay; but, as you well know, there is still much to be done in the posting of earnings and tax data and in making the distribution of payroll.

Tabulating and Other Records

At the beginning of each fiscal year, we set up a card for each employee on which are posted by posting machines previously mentioned, nontaxable earnings, earnings taxable for social security and state unemployment taxes, and earnings taxable only for income tax. These postings are made from the payroll sheets after the pay drafts have been prepared each week and are accumulated by month and by quarter.

At the close of each quarter, each card is associated with a corresponding tabulating card and by manual key punching, the employee's earnings and tax data are transferred. There is a new set of tabulating cards for each quarter. These tabulating cards serve four main functions. From them are run the social security report and the state unemployment insurance report. They are also used quarterly to verify our monthly withholding tax report and; at the close of the year, they are the basis of the set of cards used in running the W-2 forms, or earning statements.

The reports for social security taxes and state unemployment insurance are run simultaneously on the same form. We use a triplicate form which has a column for social security data and another for state unemployment insurance figures. The original is routed to the Federal Government, the duplicate to the State Government, and the triplicate to our files.

Although these same earnings records and tabulating cards are the basis of our W-2 forms and final withholding tax reports, they

are not used in computing our monthly remittances. These are mailed to the Government by our New York office on the basis of a monthly report of taxable income and deductions taken from a total of those items on the weekly payroll sheets, and remittances are made for the company as a whole. However, the monthly figures are verified each quarter against a tabulating run taken at the time the social security and unemployment insurance reports are tabulated.

At the close of the year, the four sets of cards are sorted and interfiled by employee's serial number so that the cards for each employee are grouped together. These are run for summarizing and punching of a fifth card which carries the annual totals. This fifth card, when associated with an employee's address card, is used in tabulating the W-2 employees' earning statements. A final report at the end of the year summarizes the monthly data and indicates the number of W-2 forms issued. The summarized total must agree with totals taken from the run of W-2 forms.

Labor Distribution

The last phase of our payroll work that I wish to mention is the labor distribution. The complexity of a labor distribution system is dependent upon the type of cost system employed and the diversity of the products manufactured. The employment of a job order cost system, unless accompanied by a straight-line manufacturing process, is more complex than a standard cost system. Although our company manufactures some 200,000 parts, apparatus, and subassemblies, we have standardized manufacturing operations, so that we have been using a standard cost plan for many years. This plan provides, in the majority of our operating departments, for standard running orders covering either like operations or complete parts and assemblies produced in a specific department. Under this plan it is not unusual to obtain satisfactory control and adequate costs with as few as two direct labor running orders for a department employing as many as 100 to 500 direct operators.

Further division is made in labor operations between direct and indirect. The direct operations are defined as the constant operations that advance the manufacture of a product, while the indirect operations are the fortuitous operations or occasional pay-

ments made to direct employees. As mentioned previously, an individual operator's time is recorded either on a weekly assignment card or on individual time tickets, the card being used in our standardized departments and time tickets in the jobbing departments. The latter are employed in our plant and expense departments and in our job shop manufacturing nonstandard or nonrepetitive manufactures. The operating supervisor is responsible for reconciling the clock registrations and the time tickets daily, and after these tickets are checked by the shop clerical units, they are forwarded to the cost units for summarization against individual orders. Hours are our medium of distribution, and these hours are evaluated at departmental current average hourly rates for each group. We decided to use average rates after we made quite an extensive study of using actual rates. We are convinced that by far the majority of the variations from average are fortuitous due to John's working on a specific order rather than Bill. John's rate may vary from Bill's merely on account of progression increases he has received because he happened to be in that labor grade longer than Bill. Both men could do the job equally satisfactorily.

In conclusion, I might say that our experience has taught us to strive for simplicity through the use of first, common denominators, and second, preparation of data in advance in the slack periods so that payroll on scheduled paydays can be met. During normal operations, holidays increase our peak, and often schedules are met on an overtime basis. Neverthless, come what may, the-pay-check-must-be-delivered has been our company slogan for many years.

OUR OPEN FORUM

Amortization Report

Editor, N. A. C. A. Bulletin:

I think a vote of thanks is in order to the Committee on Research and the National Headquarters Research Staff for their report on "Accounting Problems Arising from Tax Amortization of Emergency Facilities," published as Section II of the *Bulletin* of January 1, 1946.

This report does not attempt to make a decision for those involved in this question but presents in an unbiased manner the pros and cons of various methods for handling in the accounts the additional amortization because of the shortened period based on the Presidential Proclamation of September 29, 1945. The report analyzes the problem in a fine manner and should be of material value to those having to make a decision which will best fit their particular case.

Congratulations to the Committee and the Research Staff for an excellent report on an involved problem!

C. R. Culverhouse,
Birmingham Chapter.

Costs for Special Purposes

Editor, N. A. C. A. Bulletin:

I read with a great deal of interest Mr. Hanley's article in the November issue of the *N. A. C. A. Bulletin* and would like very much to recommend it to the attention of many individuals who are of the opinion that there is but one true cost of a unit of product and that this result should be obtained by various individuals working independently of each other. As Mr. Hanley so aptly points out, the final cost of product is the result of a multitude of prorations of elements of expense which are made many times on the basis of the individual's judgment and are not supported by accurate data. As can readily be seen, a variation in the individual approach in making the above allocations will of necessity affect the final cost of product to a greater or lesser degree.

In my opinion, Mr. Hanley's suggestions for obtaining cost for special purposes closely parallels our efforts during the depression of the thirties to justify accepting orders which, when costed along conventional lines, apparently would be manufactured at a loss. However, through a selective distribution of many elements of expense it was many times possible to prove that it was more profitable to accept the business than to refuse it and permit plant facilities to remain idle.

Joseph F. Cairns,
Providence Chapter.

Postwar Pricing

Editor, N. A. C. A. Bulletin:

The article "Postwar Pricing and Cost Accounting" by Harry E. Howell in the November 15, 1945, *Bulletin* presents some very interesting problems on pricing. Some of the propositions in the article are, in my opinion, not practical from the viewpoint of the manufacturer. For example Mr. Howell in his article on page 226 states, "Depreciation is a non-current cost; for pricing purposes depreciation might better be considered as part of the profit margin and be omitted from cost." This is not a sound approach to the pricing of products. There are many products which require the use of expensive equipment in their manufacture. The cost of these products should include depreciation, or the basis for comparison with the cost of products, in which depreciation is a minor item, will be distorted. In actual manufacturing planning, the depreciation of equipment is compared to the hours of labor which are saved by the use of such equipment. I wonder how Mr. Howell would consider the hours of labor which are not saved in those plants that do not have modern labor-saving equipment?

There are many examples of the recovery of costs on the basis of "what the traffic will bear," but extreme caution must be used in following such a policy, and all costs which can be reasonably charged or allocated to the products in question must be given consideration. Too many companies have gone out of business manufacturing unprofitable items which were supposed to help carry the overhead, but which should have been discontinued.

Charles K. Determan,
Los Angeles Chapter.

Accounting by Causes

Editor, N. A. C. A. Bulletin:

May I comment briefly on the address of J. B. Copper on "Accounting by Causes vs. Accounting by Accounts" at the November 20, 1945, meeting of the Birmingham Chapter? His paper appeared in the December 15, 1945, *Bulletin* and is a factual exposition of the principles stated in the article by George W. Rooney, Vice President-Comptroller of United States Steel Corporation, on "Accounting Service to Management," which was printed in November 1, 1945, *Bulletin.*

Words are strikingly interesting and meaningful. Whether spoken or written, the use of the right word or words is significant of their purpose or intention. Mr. Copper's choice of the word "causes" is excellent. The direct antonym of cause is effect. Whatever happens and whatever effect is produced can always be traced to the cause and character of the action.

While Mr. Copper's philosophy of accounting by causes will strike many as a new thing, I incline to the belief that it has been latent in the minds of good accountants for a long, long time. The questions so often raised "Why didn't we make more profit?" or "What caused such a drop in production?" are not new. The questions management asks accountants nearly

always relate to causes. The questions always have been pretty clearly stated. Mr. Copper makes it clear we just haven't answered them right so long as we expressed them in figures, percentages, comparison with previous month, etc. Management is always asking "What caused that?" To answer that question by the isolation and evaluation of causes so as to give management the true and accurate value of the causes of good or bad performance is the *summum bonum* which it earnestly desires.

To me intelligent management and sensible persons are alike in wanting to know the causes of things they experience. If either experiences something hurtful whether as to profits or good health, they want to know what caused it. They want the kind of constant analysis and evaluation of the causes of their troubles that Mr. Copper talks about.

I welcome the philosophly of Mr. Copper's plan of accounting by causes. We are all too familiar with the monotonous tedium of using accounts only, with certain footnotes to portray effects and results. I can remember when it was considered entirely correct for the chief accountant of an industry or concern to keep the books by accounts and submit profit and loss statements about operations which he personally never saw or understood. I recall too that the more intelligent operators in that period had a habit of recording daily or weekly in a small black book certain causative things, the effects of which they knew in terms of total cost. So they never read the cost sheets by accounts, but they knew a lot of the answers which their accountants missed entirely.

Mr. Copper's article is replete with practical examples of his plan. His statements about the need for sound standards, for setting goals beyond current specifications that should bring about further improvements in methods and costs, for being alive and alert to progress and for eternally having curiosity and imagination, should be inspiring to all of us who strive to learn better ways of doing things. His article sets forth a new and fine philosophy of accounting in a most informative and practical fashion.

NEILL HUTCHINGS,
Birmingham Chapter.

CONTROL OF WORK IN PROCESS INVENTORIES

Editor, N. A. C. A. Bulletin:

Earl K. Johnson in his interesting and informative article published in the November 15, 1945 *N. A. C. A. Bulletin,* refers to several aspects of raw material inventories which I would like to comment on. The classification of raw material inventories by products in the operating ledger is an appropriate arrangement for providing information so that turnover of inventories may be carefully watched and possible unfavorable trends brought to the attention of the management for corrective action.

In respect to requisitioning various necessary raw materials from the purchasing department, I believe this duty should be performed by the production control department based upon a periodical material shortage

report prepared by the inventory control personnel, showing maximum and minimum quantities allowable for the various raw materials and the quantity on hand. This method gives the production control department the responsibility in requisitioning necessary materials to meet production orders in such a manner that proper authority is placed under the supervision of the department which controls all production scheduling.

The issuance of raw material requisitions by the production control department based upon a bill of material prepared by the engineering department is highly commendable, forestalling wastage of valuable materials by the various fabricating departments.

It is true, however, that to control raw material inventories accurately is a vexatious situation at times. The author illustrates in his article a material requisition which has several outstanding features of merit: the bin number, bin balance, and the time stamp. The recording of the above date on the requisition gives a tight control over proper posting sequence and accuracy of balances as to quantity on the various records in the inventory control office, eliminating unnecessary clerical expense involved in auditing and rechecking numerous postings which unfortunately do not guarantee that the material is on hand and is available in the stockrooms.

It is a matter of controversy, however, whether computing the cost of material requisitions and inventory records should be accomplished at the same time, and whether a day-to-day cost valuation provides a workable method of raw material cost control, that is, one which is practical and flexible in its operation.

WALDO H. ROTHERT, JR.,
Los Angeles Chapter.

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Correction

Through error the name of Frederick J. Ey was included in place of the name of William H. Tait in the December 15 *Bulletin* list of members who had died during the 1944-45 Association year. Mr. Tait, who was associated with the Submarine Signal Company of Boston died in November, 1944. His membership was subsequently transferred to Mr. Ey of the same company. In the preparation of the list the names became transposed, and Mr. Ey was listed in place of Mr. Tait. Our apologies and regrets go to Mr. Ey, who, his friends will be glad to learn, continues a vital living entity.

PENNSYLVANIA REGIONAL COST CONFERENCE TO BE HELD APRIL 6

Pennsylvania Regional Cost Conference, sponsored by the York, Harrisburg, Lancaster, and Reading Chapters is to be held at the Yorktowne Hotel in York on Saturday, April 6, 1946. Members of the Baltimore, Erie, Hagerstown, Williamsport, Lehigh Valley, Philadelphia, Pittsburgh, and Scranton Chapters are being invited to join with the members of the sponsoring chapters as participants in the Conference. On Friday evening preceding the Conference the officers and directors of the participating chapters will hold a Chapter Officers' Conference at the Yorktowne Hotel for the discussion of chapter operations.

The Committee in charge of the Conference under the chairmanship of John Wiebenga, Past President of the York Chapter, has selected "A Return to Cost Control" as the theme of the Conference. In addition to morning and afternoon technical sessions, the Conference will include a luncheon and banquet. The Committee in charge has issued a cordial invitation to all N. A. C. A. members to attend the Pennsylvania Regional Cost Conference.

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THE 1946 COST CONFERENCE

Plans for the 1946 Cost Conference of the Association, to be held at the Waldorf-Astoria Hotel in New York on June 17, 18, and 19, 1946, are moving forward rapidly, with both the Conference Committee and the Technical Program Committee intent on making this year's Conference "the biggest and best yet." In addition to five technical sessions on Monday, Tuesday, and Wednesday morning, the Conference Committee under the chairmanship of George Nohe of Brooklyn is busy with plans for the many other activities which have become associated with N. A. C. A. Conferences. These include the Sunday Reception, the Presidents' Reception, the Annual Meeting and Election of Officers, Machine Exhibits, the Annual Meeting of the Spot Club, the Chapter Officers' Conference, and the Annual Banquet. Watch the *Bulletin* for further details on these activities. Committees of the New York, Brooklyn, Newark, and Greenwich Chapters are cooperating with the Conference Committee to make the 1946 Conference one to be remembered.

The Technical Program Committee under the chairmanship of Horace Crockett is busily engaged in the building of a technical program of great current interest and importance. Built around the theme, "The Place of Accounting in Industry," the program will stress the ways in which the industrial accountant can make the greatest contribution to the management of American industry. The complete technical program will be published in an early issue of the *Bulletin*.

HOTEL ROOMS FOR THE 1946 CONFERENCE

In previous years, with the exception of the 1942 Conference in Boston, it was possible to provide rooms in the conference hotel for all members of the Association attending the Annual Cost Conference. With the rapid growth of the Association, it will become increasingly difficult to provide rooms in a single hotel for all who wish to attend. Few hotels, even in the largest metropolitan centers, are able to set aside the 1,000 to 1,200 rooms which our members need.

As our members will know, hotel rooms are difficult to obtain in most cities—both large and small. In New York City, the situation is critical. There is no present indication that the demand for rooms will diminish for many months to come. For this reason, the Waldorf-Astoria Hotel has found it impossible to provide rooms for more than a small proportion of the members who probably will want to attend the 1946 Conference. To provide the accommodations that will be needed, the Waldorf-Astoria with the active assistance of the New York Convention Bureau has made arrangements with other hotels in the Grand Central area for the required number of rooms. These hotels—all within easy access of the Waldorf-Astoria—have each assigned a definite number of rooms to N. A. C. A. members for the period of the Conference.

At an early date, all N. A. C. A. members will receive full particulars regarding the hotels which will be available to them. Reservation cards will be provided on which members may indicate their preferences. The hotel group will assign members to rooms in order of their preference. In the few cases where this is not possible, assignments to other hotels will be made in order to assure members of accommodations.

The hotels themselves have brought forward the suggestion that if any members already have hotel connections in New York which they have established through periodic use, efforts be made to obtain reservations at such hotels for the duration of the Conference but that in making their request *no mention be made of the N. A. C. A. Conference.* In this way, it will be possible for many members to obtain accommodations in hotels of their choice without drawing upon the allotments which have been agreed to by the hotels in the Grand Central area.

Much as we regret the necessity of placing our conference hotel arrangements on this basis, there seems to be no other satisfactory way to handle the problem if we are to give opportunity to our members to attend the annual conference. In view of present conditions—conditions over which the Association has no control—we confidently believe that our members will make the best of an annoying situation.